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# Institute for Policy Research

## The cost of binge drinking in the UK

### About this research

Much is known about the effects and costs of sustained heavy drinking, such as the increased risk of chronic disease and injury to individuals, the damage to social relationships and the additional burden on public services (such as healthcare and policing). However, little is known about the economic and social effects of binge drinking. This brief, by Dr Jonathan James (University of Bath) and Professor Marco Francesconi (University of Essex) estimates the additional cost to the economy generated by binge drinking by examining its effects on Accident and Emergency (A&E) admissions, road accidents, arrests and the number of police officers on duty. This estimate is then used to assess the likely effectiveness of policies designed to discourage binge drinking and mitigate its effects and costs. The three potential policy interventions considered are minimum unit pricing, alcohol excise taxes and a higher minimum legal drinking age (MLDA).



## Research findings in context

Harmful alcohol use has been identified as one of the leading preventable causes of death and a key risk factor for chronic diseases (such as cancer) and injuries worldwide. Specifically, alcohol use is responsible for 5.9% (approximately 3.3 million) of deaths every year and places a similar burden on public health services as smoking.

Excessive alcohol consumption has been the direct target of health policy interventions worldwide (World Health Organization 2010 and 2014). Common policies aimed at discouraging alcohol misuse and raising income to pay for its burden on society (e.g. increased costs to public services including health and policing) include raising alcohol taxes, setting a minimum price per unit of alcohol and restricting alcohol availability through the minimum legal drinking age (MDLA). Identifying the effects of binge drinking and assessing what they cost can inform these public policy initiatives.

While there is an existing body of research on the economic impacts of sustained heavy drinking, less is known about the economic cost of binge drinking. Binge drinking is an alcohol use pattern characterised by periods of heavy drinking followed by abstinence. It generally results in short-term acute impairment and is believed to contribute to a substantial proportion of alcohol-related deaths and injuries. Little is known about the causal impact of binge drinking on individual outcomes, such as road accidents and arrests. Additionally, little is known about the cost of binge drinking to the economy.

For the purposes of this research, binge drinking is defined as the consumption of 12+ units of alcohol in any one period of drinking and typically taking place on Friday and Saturday nights among individuals aged between 18 and 30. The four effects examined – increased A&E attendances, road traffic accidents, arrests and the number of police officers on duty – have never before been analysed in the context of binge drinking.

This research finds that binge drinking increases the average number of daily injury-related A&E attendances by 8%, the daily average of road accidents by 17%, the average daily number of arrests for all alcohol-related incidences by 45%, and increases the number of police officers on duty by around 30%. Nationally, this is equivalent to 2,504 additional A&E attendances per day, an additional 82 road accidents per day, 786 additional arrests per day and an additional 3.2 police officers on duty at the weekend for every 10,000 people in the UK.

The cost of these effects is calculated using data available from a number of UK Government departments. The Department of Health (2013) estimates the cost of

## Key findings

### The research estimates that binge drinking increases:

- The average number of daily injury-related A&E admissions by 8% (equivalent to 2,504 additional daily admissions nationally).
- The daily average of road accidents by 17% (equivalent to 82 additional accidents per day nationally).
- The average number of alcohol-related arrests by 45% (equivalent to 786 additional arrests per day nationally).
- The number of police officers on duty by around 30% (equivalent to an additional 3.2 police officers on duty at the weekend for every 10,000 people in the country).

### The research calculates that:

- At 2014 prices, the cost of these effects of binge drinking amounts to roughly £4.86 billion per year (£77 per year per capita).
- Current and proposed policies to regulate alcohol sales and consumption are inadequate to fully mitigate this economic impact.

attending A&E at £114 per person per visit. The average unit cost of an arrest (£14,836) is derived from Home Office figures (2011). The cost arising from having additional police officers on duty is based on a £15 hourly wage per Police Constable (2014). Lastly, the Department for Transport (2012) estimates the cost of road accidents by taking account of ambulance and hospital (excluding A&E) treatment costs, damage to vehicles and property, administrative costs associated with accident insurance, and the human cost of fatalities. Using 2014 prices, a fatal accident was estimated to cost £2.07 million. (See section on Methodology for additional information on data sources and how they are used in this research).

This research indicates that a conservative total estimate of the economic cost of binge drinking at 2013-14 prices is £4.86 billion per year; equivalent to £77 per person living in the UK. In context, this is greater than the amount the UK Government spent in 2013-14 on Income-based Jobseeker's Allowance, which had 1.2 million claimants and is the UK's largest social security benefit.

## Policy implications

Understanding the economic cost of binge drinking can inform the public policy debate on alcohol use and contribute to more effective policy design. According to industry estimates, 52.8 billion units of alcohol were consumed in the UK in 2013. Given the total estimated cost of binge drinking is £4.86 billion, at 2013/14 prices this equates to 9.8p per alcoholic unit consumed. To fully recover this cost would imply a 23% increase in the average retail price of alcohol (which was 42p in 2013/14) – equivalent to an additional 99p per bottle of wine and 23p per pint of beer.

There are several policies that could be implemented to recover this cost including, among others: minimum unit pricing, reform of the alcohol excise tax system and restricting the availability of alcohol through increasing the MLDA.

### *Minimum pricing*

Minimum pricing policies establish a minimum price below which a unit of alcohol cannot legally be sold to consumers. In the UK, minimum unit prices under consideration range from 45-50p. Based on the average retail price of 42p per unit of alcohol in 2013/14, this research suggests that even the higher minimum price of 50p per unit falls short of the adjustment needed to offset the cost of binge drinking. According to the estimates in this research, a minimum price of 52p per unit would be required to offset the cost. Furthermore, a legal challenge to proposed minimum pricing legislation in Scotland (Stockwell and Thomas 2013) indicates that policy makers may struggle to implement such a policy. Other reservations about minimum pricing policies include concerns that responsible drinkers and individuals on low incomes might be disproportionately affected (Ludbrook et al. 2012).

### *Reforming alcohol excise taxes*

An alternative policy is to reform the system of alcohol excise taxes so that rates increase directly in line with alcohol strength (Griffith, Leicester, and O'Connell 2013). Proposed excise taxes of 8.9p on 4% alcohol by volume (ABV) beer, 27.2p on 13% ABV wine are well below the 23% increase required to offset the cost of binge drinking. This research finds that excise taxes would have to be set at 23p per pint of beer and 99p per bottle of wine.

### *Restricting alcohol availability*

A third policy option is to restrict alcohol availability. Imposing a higher MLDA may reduce the impact of binge drinking by preventing a proportion of the 18 to 30 age group that commonly binge drink from obtaining alcohol. Based on evidence from the US (Carpenter and Dobkin 2009; 2010), this research estimates that increasing the MLDA in the UK from 18 to 21 would reduce the number of road accidents by 15%. This would amount to a reduction of 4.9% in the estimated cost of binge drinking-related road accidents, leading to a £100 million saving. Nevertheless, this saving represents only 2.1% of the total £4.86 billion estimated cost of binge drinking. Overall, increasing the MLDA from 18 to 21 is likely to offset only a small percentage of the cost.

### *Conclusion*

This research demonstrates that current and proposed policies to regulate alcohol sales and consumption are inadequate to fully mitigate the economic impact of binge drinking. Any policy solution will need to increase the average retail price of alcohol by at least 10p per unit to fully offset this cost. By taking into account the estimated cost of binge drinking policy makers can better tailor alcohol regulation policies to recover a greater proportion of this cost. Furthermore, it is clear that more needs to be done to address the social factors leading to binge drinking. Although, this research has been motivated to determine the economic costs of binge drinking, it is clear that unless approaches to understanding and tackling alcohol misuse are comprehensive, economic policies designed to mitigate the cost of binge drinking can have only limited success, and may well have a disproportionate punitive effect on responsible drinkers.

## Methodology

This research uses two data sets, the first on binge drinking status and the second on outcomes (A&E attendances, road accidents, arrests and number of police officers on duty) to calculate how these outcomes are affected during the times when binge drinking is most likely to take place. Rates of binge drinking are compared during the week and weekend and between two different age groups - those aged 18-30 and those aged over 50. Those aged 18-30 are more likely to binge drink, particularly during the weekend. Outcomes for these two age groups are then compared during weekend nights. These results are combined to estimate the effect of binge drinking on the outcomes of interest.

A note on data sources: This research uses data from different time periods. For example, A&E attendance records from April 2008 to January 2011 and Road Accidents Data (RAD) from 2006-2009. Availability of data is a limitation of this research and all estimates for temporally-limited data have been calculated on the assumption that the overall pattern of binge drinking has not changed significantly. This assumption is the subject of some debate. Nevertheless, this research primarily offers an approach to calculating the cost of binge drinking given known binge drinking patterns.

This research also combines national (e.g. RAD) and regional data (e.g. A&E attendances from the former Solihull Care Trust, arrests data from the Metropolitan and West Midlands police forces, and data on the numbers of police officers on duty at weekends from Durham and London). Where data is regional it has been scaled to the national level. This is justified as Solihull compares well to national age profiles and averages of health behaviours. Similarly, West Midlands arrests data is similar to national averages, and London has a slightly younger and healthier population, leading to a conservative estimate.





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## More on this research:

\*This Policy Brief draws on and updates analysis published in the following Working Paper:

James, J., and Francesconi, M. 2015. *The Cost of Binge Drinking*. Bath Economics Research Papers No. 36/15. Available at: <http://www.bath.ac.uk/economics/research/working-papers/2015-papers/cost-binge-drinking.pdf>.

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